CLAIMS

1. An expander device for isolating bus segments from one another in an I/O subsystem, the expander device coupling the bus segments for communication in the I/O subsystem, the expander device including:

a first I/O interface circuit configured to be coupled to a first bus segment, the first I/O interface circuit being adapted to interface input and output communication signals with the first bus segment;

a second I/O interface circuit configured to be coupled to a second bus segment and being adapted to interface the input and output communication signals with the second bus segment; and

an expander controller coupled to communicate the input and output communication signals between the first and second I/O interface circuits, the expander controller being arranged to control communication between the bus segments, the expander controller including a segment controller adapted to generate a first signal, wherein the segment controller provides the first signal to the first and second I/O interface circuits to disable output of the communication signals from the first and second I/O interface circuits to the first and second bus segments.

2. The expander device as recited in claim 1, wherein the disabling of the output of the communication signals isolates the first and second bus segments from one another in an isolation mode so that the communication signals received on one bus segment are not transmitted to the other bus segment.

3. The expander device as recited in claim 2, wherein the expander device is adapted to receive the communication signals from the first and second bus segments while in the isolation mode.

4. The expander device as recited in claim 3, wherein the segment controller generates the first signal in response to an isolation command received from the first bus segment.

5. The expander device as recited in claim 4, wherein the segment controller deasserts the first signal to exit from the isolation mode.

6. The expander device as recited in claim 5, wherein the segment controller deasserts the first signal when the second bus segment is in a bus free state.

7. The expander device as recited in claim 4, wherein the first I/O interface circuit includes a first input buffer and a first output buffer and wherein the second I/O interface circuit includes a second input buffer and a second input buffer.

8. The expander device as recited in claim 7, wherein the first and second input buffers are arranged to drive the communication signals for input to the expander device from the first and second bus segments, respectively, and wherein the first and second output buffers are arranged to drive the communication signals for output from the expander device to the first and second bus segments, respectively.

9. The expander device as recited in claim 8, wherein the first signal disables the first and second output buffers to disable the output of communication signals to the first and second bus segments, respectively.

10. The expander device as recited in claim 1, wherein the first and second bus segments are SCSI bus segments and wherein the expander controller is an SCSI controller.

11. An SCSI expander for isolating bus segments in an SCSI I/O subsystem, the SCSI expander device coupling a first SCSI bus segment and a second SCSI bus segment in the SCSI I/O subsystem, the SCSI expander being configured to repeat communication signals by receiving the communication signals from one SCSI bus segment and outputting the communication signals to the other SCSI bus segment, the SCSI expander comprising:

a first SCSI I/O interface circuit adapted to interface communication signals with the first SCSI bus segment;

a second SCSI I/O interface circuit adapted to interface the communication signals with the second SCSI bus segment; and

an SCSI expander controller coupled to communicate the communication signals between the first and second SCSI I/O interface circuits, the SCSI expander controller being arranged to control communication between the first and second SCSI bus segments, the SCSI expander controller including a segment controller adapted to generate a first signal, wherein the segment controller provides the first signal to the first

and second SCSI I/O interface circuits to disable output of the communication signals from the first and second SCSI I/O interface circuits to the first and second SCSI bus segments, wherein the disabling of the output of the communication signals isolates the first and second SCSI bus segments from one another in an isolation mode so that the communication signals received on one SCSI bus segment are not transmitted to the other SCSI bus segment.

12. The SCSI expander as recited in claim 11, wherein the SCSI expander is adapted to receive the communication signals from the first and second SCSI bus segments while in the isolation mode.

13. The SCSI expander as recited in claim 11, wherein the segment controller generates the first signal in response to an isolation command received from the first SCSI bus segment.

14. The SCSI expander as recited in claim 13, wherein the segment controller disables the first signal to exit from the isolation mode.

15. The SCSI expander as recited in claim 14, wherein the segment controller disables the first signal when the second SCSI bus segment is in a bus free state.

16. The SCSI expander as recited in claim 14, wherein the first SCSI I/O interface circuit includes a first input buffer and a first output buffer and wherein the

second SCSI I/O interface circuit includes a second input buffer and a second input buffer.

17. The SCSI expander as recited in claim 16, wherein the first and second input buffers are arranged to drive the communication signals for input to the SCSI expander from the first and second SCSI bus segments, respectively, and wherein the first and second output buffers are arranged to drive the communication signals for output from the SCSI expander to the first and second SCSI bus segments, respectively.

18. The SCSI expander as recited in claim 17, wherein the first signal disables the first and second output buffers to disable the output of communication signals to the first and second SCSI bus segments, respectively.

19. A method for isolating bus segments in an I/O subsystem, the I/O subsystem having an expander coupled between a first bus segment and a second bus segment, the expander being configured to repeat communication signals by receiving the communication signals from one bus segment and outputting the communication signals to the other bus segment, the method comprising:

receiving, by the expander, an isolation command from a host computer on the first bus segment, the isolation command being configured to instruct the expander to isolate the first bus segment from the second bus segment; and

configuring the expander in response to the isolation command to operate in an isolation mode, wherein the expander in the isolation mode operates to prevent

communication signals received on one bus segment from being output onto the other bus segment such that the first and second bus segments are isolated from one another.

20. The method as recited in claim 19, wherein the expander is adapted to receive the communication signals from the first and second bus segments during the isolation mode.

21. The method as recited in claim 19, wherein the expander includes a first I/O interface and a second I/O interface, the first and second I/O interfaces being arranged to couple the expander to the first and second bus segments, respectively, the first and second I/O interfaces being adapted to interface the communication signals for input and output to and from the expander.

22. The method as recited in claim 21, wherein the expander generates a first signal in response to the isolation command received from the host computer over the first bus segment, and wherein the first signal is provided to the first and second I/O interfaces to disable output of communication signals from the expander.

23. The method as recited in claim 22, wherein the first signal is deasserted to exit from the isolation mode.

24. The method as recited in claim 23, wherein the expander deasserts the first signal when the second bus segment is in a bus free state.

25. The method as recited in claim 22, wherein the first I/O interface circuit includes a first input buffer and a first output buffer and wherein the second I/O interface circuit includes a second input buffer and a second input buffer.

26. The method as recited in claim 25, wherein the first and second input buffers are arranged to drive the communication signals for input to the expander from the first and second bus segments, respectively, and wherein the first and second output buffers are arranged to drive the communication signals for output from the expander to the first and second bus segments, respectively.

27. The method as recited in claim 26, wherein the first signal disables the first and second output buffers to disable the output of communication signals from the expander to the first and second bus segments, respectively.

28. The method as recited in claim 19, wherein the first and second bus segments are SCSI bus segments and wherein the expander is an SCSI expander.